

### **REMARKS**

Entry of the foregoing, reexamination and reconsideration of the subject application are respectfully requested in light of the amendments above and the comments which follow.

As correctly noted in the Office Action Summary, claims 1-9 were pending with claims 8 and 9 withdrawn from consideration. By the present response, claims 1-3 have been amended, claim 4 canceled, and claim 10 has been added. Thus, upon entry of the present response, claims 1-3 and 5-10 (claims 8 and 9 withdrawn) remain pending and await further consideration on the merits.

Support for the foregoing amendments can be found, for example, in at least the following locations in the original disclosure: the original claims and the specification, page 4, lines 13-14 and lines 23-25.

### ***DRAWINGS***

The drawings are objected to on the grounds set forth in paragraphs 4 and 5 of the Official Action. By the present response, applicants have amended page 4, line 11 of the specification to insert reference numeral 15 in agreement with reference numeral 15 in Figure 1, renumbered original Figure 2 as Figure 2A and inserted new Figure 2B to illustrate that each of the plurality of valleys or recesses extend helically from an inlet and to an opposite end of said tube in agreement with the 3<sup>rd</sup> paragraph on page 4, beginning at line 10, and have amended Figures 3, 4 and 5 to provide appropriate English translation of the noted terms in the Official Action. Each of the four graphs in original Fig. 5 is now individually labeled as Figs. 5A to 5D, respectively. In addition, the specification has been amended in

agreement with the amendments to the figures where appropriate. Reconsideration and withdrawal of the objection is respectfully requested.

***CLAIM REJECTIONS UNDER 35 U.S.C. §112***

Claims 1-7 stand rejected under 35 U.S.C. §112, second paragraph on the grounds set forth in paragraph 9 of the Official Action.

By the present response, applicants have amended claims 1 and 3 in a manner which addresses the above-noted rejection. Specifically, claim 1 now recites the alloy has a balance Fe and recites that the valleys or recesses are smoothly curved. Claim 3 has been amended to delete reference to each of the plurality of peaks. Therefore, reconsideration and withdrawal of the rejection is respectfully requested.

***CLAIM REJECTIONS UNDER 35 U.S.C. §103***

Claims 1-7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,016,460 to England et al. (hereafter "*England et al.*") in view of U.S. Patent No. 5,126,107 to Darnfors (hereafter "*Darnfors*") on the grounds set forth in paragraph 12 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

The present invention is directed to a metal tube for use in furnaces. Claim 1 recites that a metal tube comprises, *inter alia*, a body, a smooth outer surface and an inner surface with a profile, wherein the body is made of a stainless iron-nickel-chromium base alloy comprising, in weight %, max 0.08% C, 23-27% Cr, 33-37% Ni, 1.3-1.8% Mn, 1.2-2% Si, 0.08-0.25% N, 0.01-0.15% rare earth metals, balance Fe;

and normal impurities; the profile comprises a plurality of valleys or recesses, said valleys or recesses extending longitudinally along the tube and are smoothly curved; and a chromium oxide layer on the inner surface.

The rejection based on the disclosures in *England et al.* in view of *Darnfors* is improper and should be withdrawn because a *prima facie* case of obviousness has not been established. A *prima facie* case of obviousness includes three elements. First, there must be a suggestion or motivation within the references for the proposed modification or combination. Second, there must be some reasonable expectation of success for the proposed modification or combination. Finally, the proposed combination must teach or suggest all of the elements of applicants' claims. See MPEP §2142-2143. Here, a *prima facie* case of obviousness has not been established because the proposed combination of the disclosures in *England et al.* and *Darnfors* does not contain all of the elements of applicants' claims.

*England et al.* discloses an oversized, internally finned tube 24 formed with a mandrel 10. Oversized tube 24 has fins 26 and radially overspaced depressions 28. Figure 5 depicts the oversized diameter pipe. *England et al.* discloses that the oversized internally finned tube was formed of INCOLOY® alloy 800HT® having a composition as disclosed at column 2, lines 65 et seq. *England et al.* also further discloses that other alloys that may be suitable for use with the invention are those "difficult to work alloys" such as alloys with greater than 30 wt % nickel and 10 wt % chromium. See column 5, lines 11-14.

The Examiner relies on the disclosure in *Darnfors* for the alloy composition. *Darnfors* discloses an iron, nickel, chromium base alloy having an austenitic structure. The composition of the alloy is provided at Table 1 in column 2.

However, the combination of the disclosures in *England et al.* and *Darnfors* does not include each and every element of applicants' independent claim 1. Specifically, neither the disclosure in *England et al.* nor the disclosure in *Darnfors* includes a metal tube having the composition recited in claim 1, the profile recited in claim 1, and a chromium oxide layer on the inner surface as recited in claim 1. Thus, a *prima facie* case of obviousness has not been established by the Official Action. Because the disclosures relied upon in the rejection do not include all of the elements of applicants' independent claim 1, the rejection is improper and should be withdrawn. See MPEP §§2142-2143.

Applicants remaining claims each depend directly or indirectly from independent claim 1 and are therefore improperly rejected over the disclosure in *England et al.* and *Darnfors* for at least the same reason as noted above. Accordingly, withdrawal of these rejections is respectfully requested.

#### ***NEW CLAIM***

New claim 10 has been added depending from independent claim 1. Claim 10 recites that the tube is conically shaped from inlet end to opposite end. It is respectfully asserted that dependent claim 10 distinguishes over the cited reference for at least the same reason as independent claim 1.

#### ***CONCLUSION***

From the foregoing, further and favorable action in the form of a Notice of Allowance is earnestly solicited. Should the Examiner feel that any issues remain, it

is requested that the undersigned be contacted so that any such issues may be adequately addressed and prosecution of the instant application expedited.

Respectfully submitted,

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Fig. 1

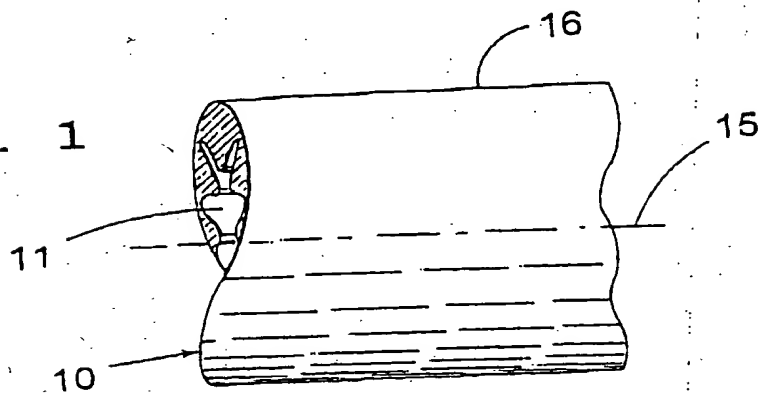
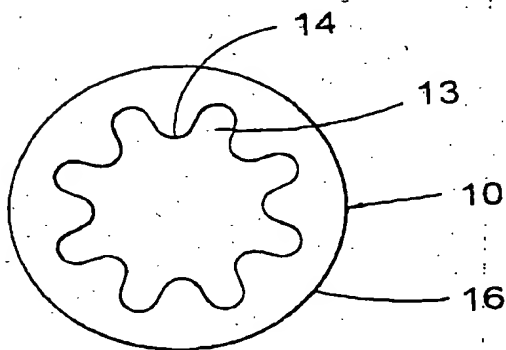


Fig. 2A



ANNOTATED SHEET

APPLN. FILING DATE: NOVEMBER 26, 2001

TITLE: CYLINDRICAL TUBE FOR INDUSTRIAL CHEMICAL INSTALLATIONS

INVENTOR(S): CLAES OHNGREN ET AL.

APPLN. SERIAL No.: 09/991,703

SHEET 2 OF 3

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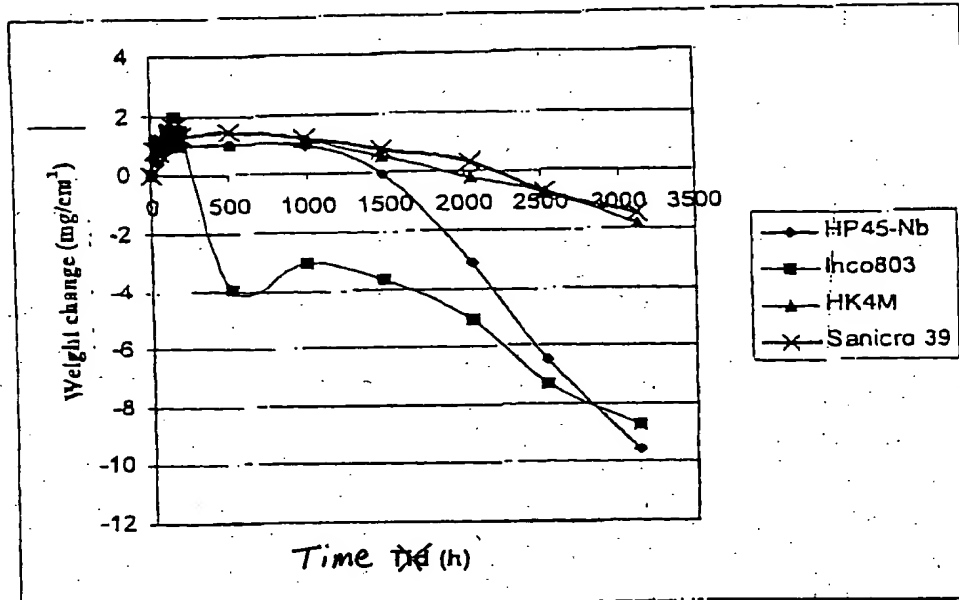


FIG. 3

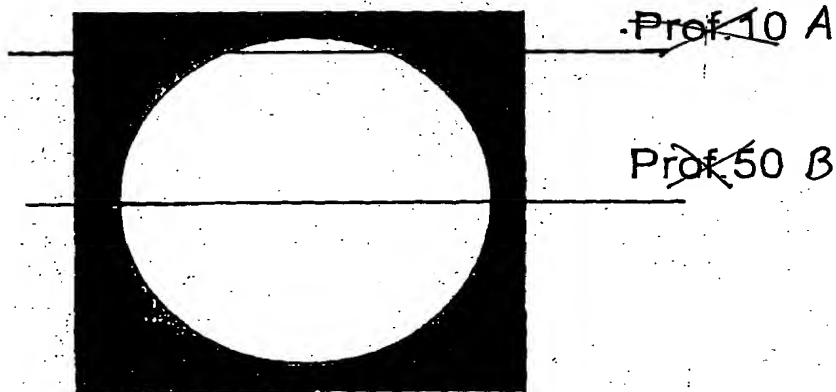


FIG. 4

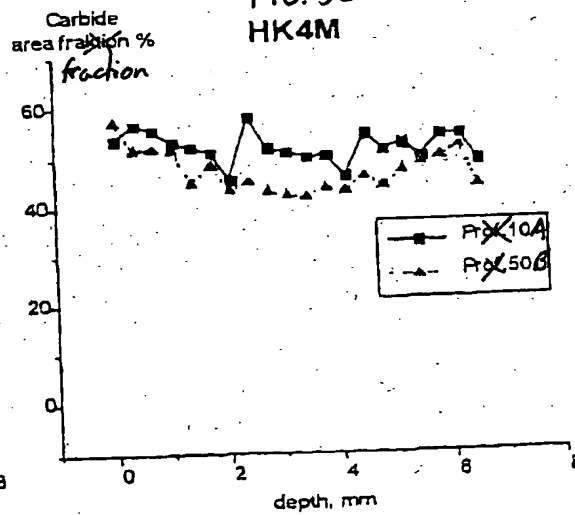
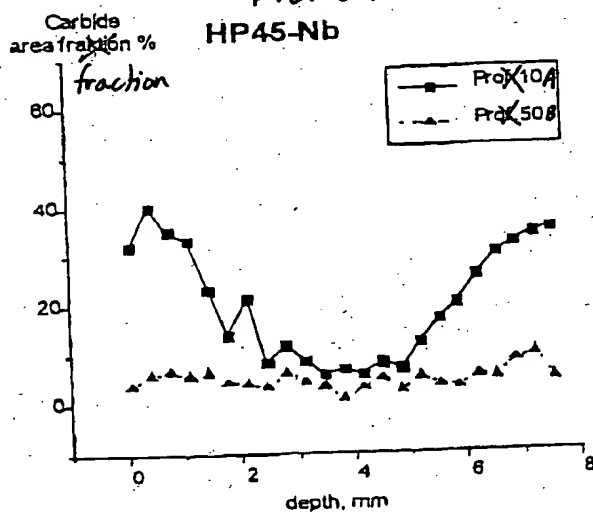
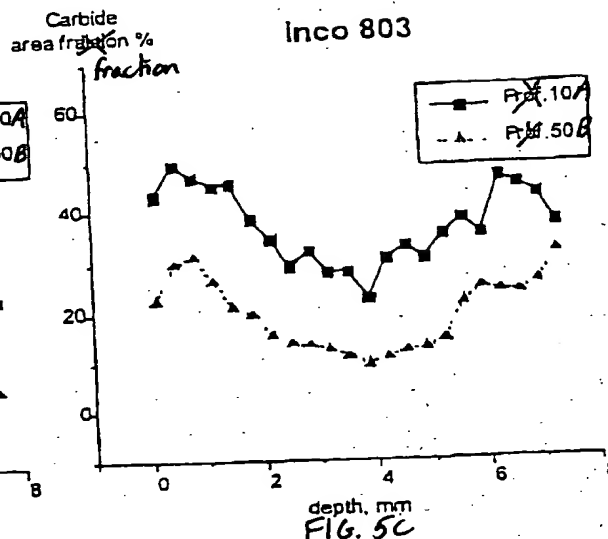
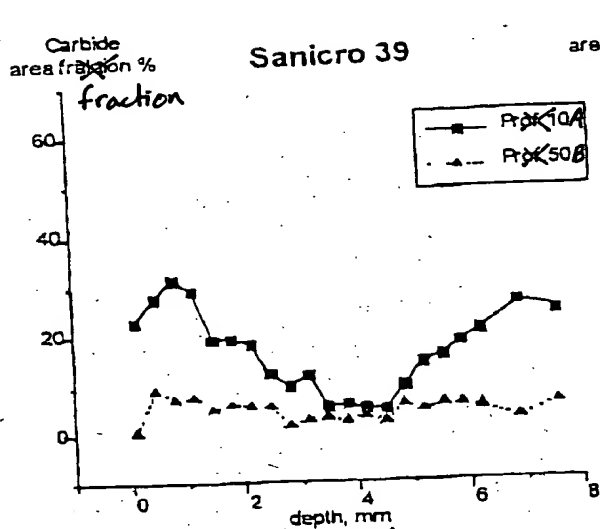


FIG. 5